

7.0 WILDLAND/URBAN FIRE MODELING

Figures 13 through 16 show models developed by BLM's Upper Snake River District (USRD) Geographic Information Systems (GIS) team and the GIS Training and Research Center (GISTReC) at Idaho State University (ISU) (Frank 2004), to predict potential wildfire risk areas for Oneida County.

Figure 13 illustrates the fuel loads derived from field training sites and Landsat 7 ETM+ satellite imagery. Fuel Load class 2-4 tons/acre received the highest fire risk value, because of its high load of fine, low-standing fuels. Fuel Load class >4 tons/acre received the lowest fire risk value since these fuels are of a larger size and higher moisture content, so they will not ignite as quickly.

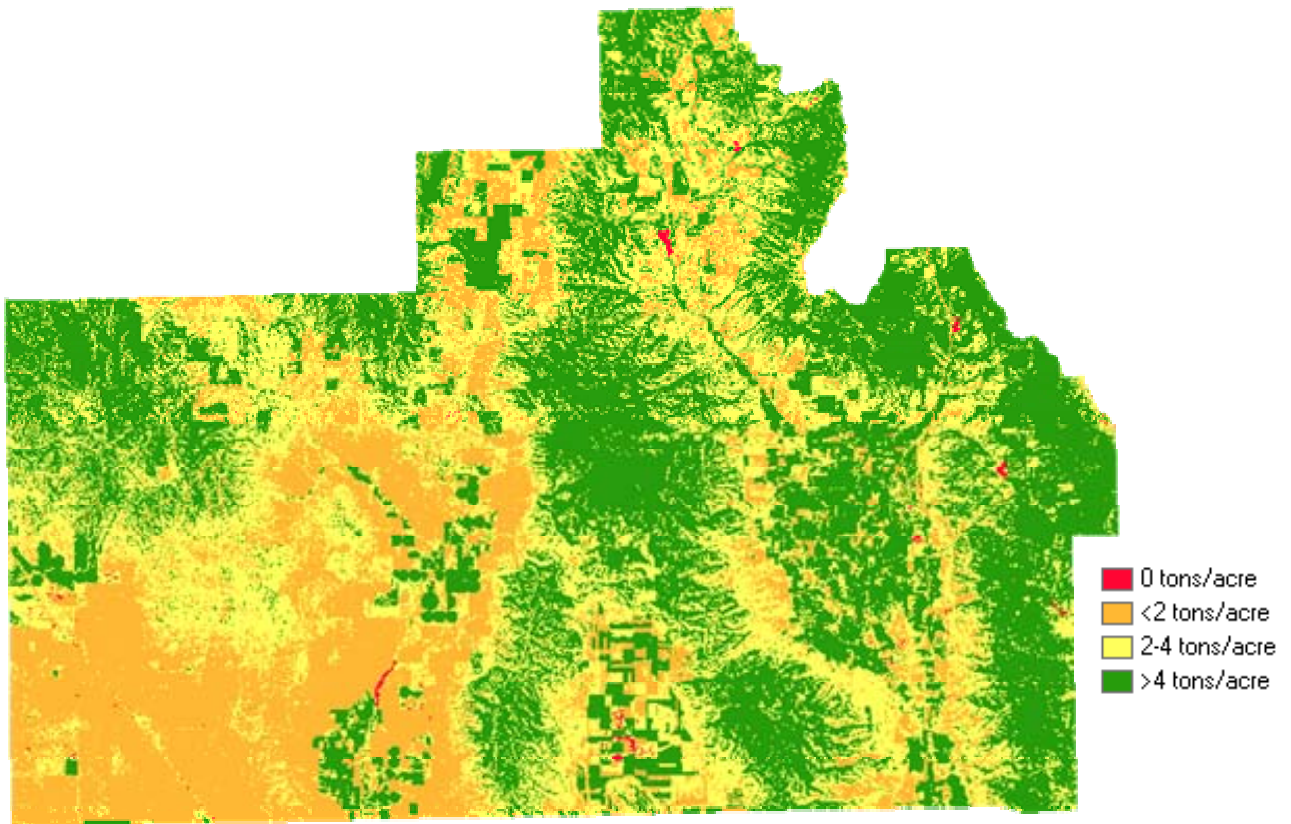


Figure 13. Fuel load model and the distribution of different fuel load classes.

Figure 14 illustrates the vegetation moisture showing irrigated and riparian areas contain the lowest risk values, while the grasses, shrubs, and mountainous areas contain the highest values. The high risk areas are due to the low moisture content associated with sagebrush steppe that dominates the area.

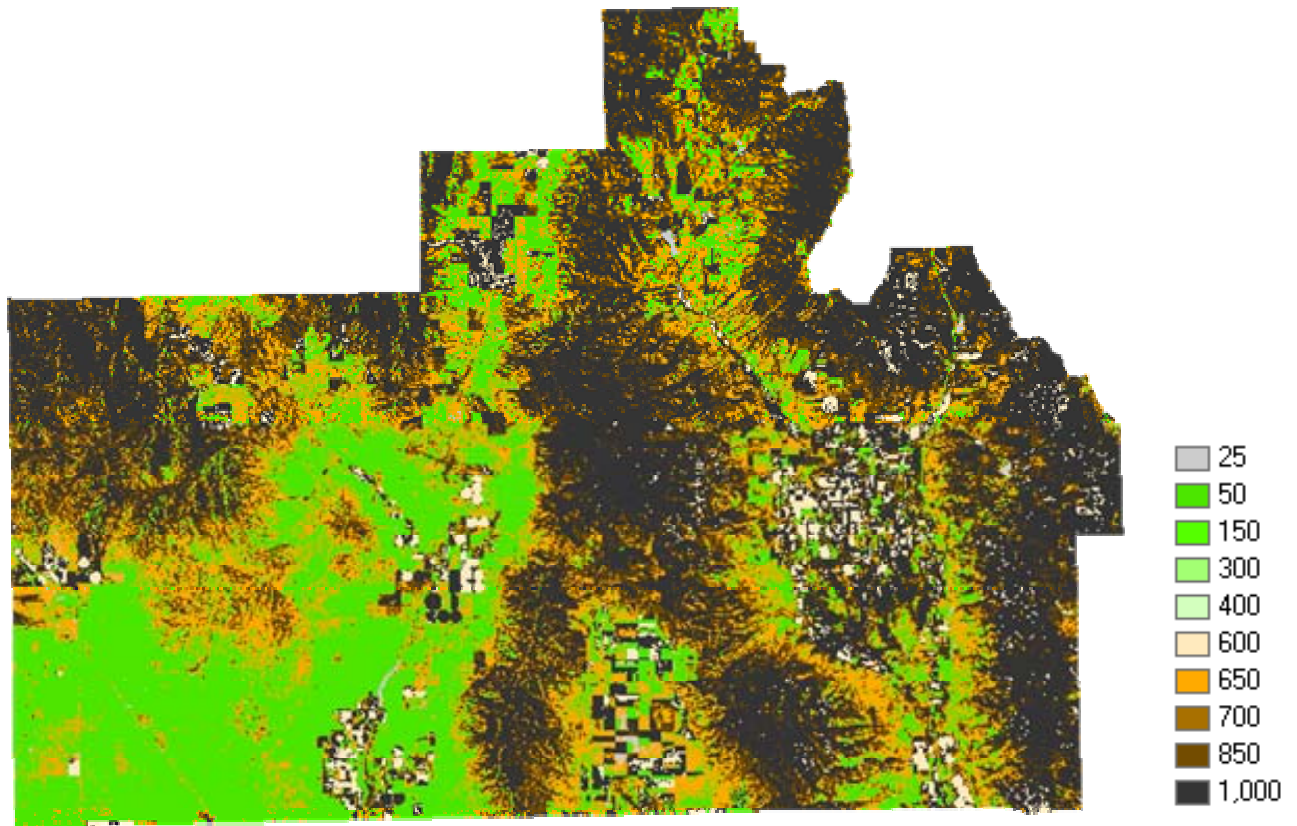


Figure 14. Fuel moisture compared to different fuel load classes. (The lower the number the lower the fire risk value.)

Figure 15 illustrates the fuel load and rate of spread and takes into account how fast a fire will spread depending on different fuel load classes. The lower fuel load classes were considered to be the primary carrier of fire (e.g. grasses) and have the fastest spread rate. Mountainous areas, with larger fuel loads, contain the lowest values, where grasses and shrubs in the southwestern portion of Oneida County contain the highest values.

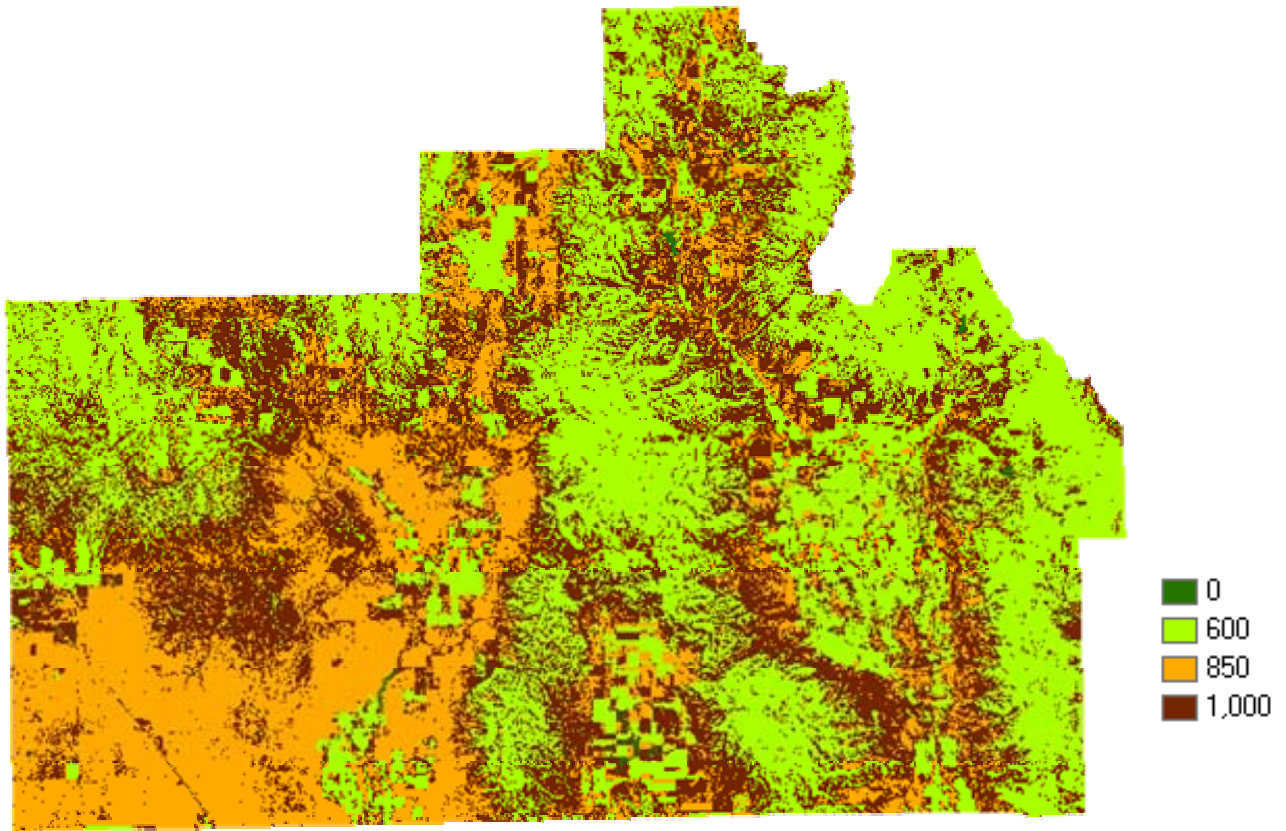


Figure 15. Fire risk associated with the spread rate of different fuel load classes. (The lower the number the lower the fire risk value.)

Figure 16 takes into account how intense a fire of different fuel load classes affects fire risk. Intensity is considered the amount of energy a fire produces. The more energy the fire produces, the more difficult it is for the firefighters to suppress it. Intense fires create their own wind system, drying out fuel ahead of the fire. This intensity depends on fuel load and other factors such as wind and ground conditions at the time of the fire. Thus, if firefighters do not suppress the fire, it will keep spreading.

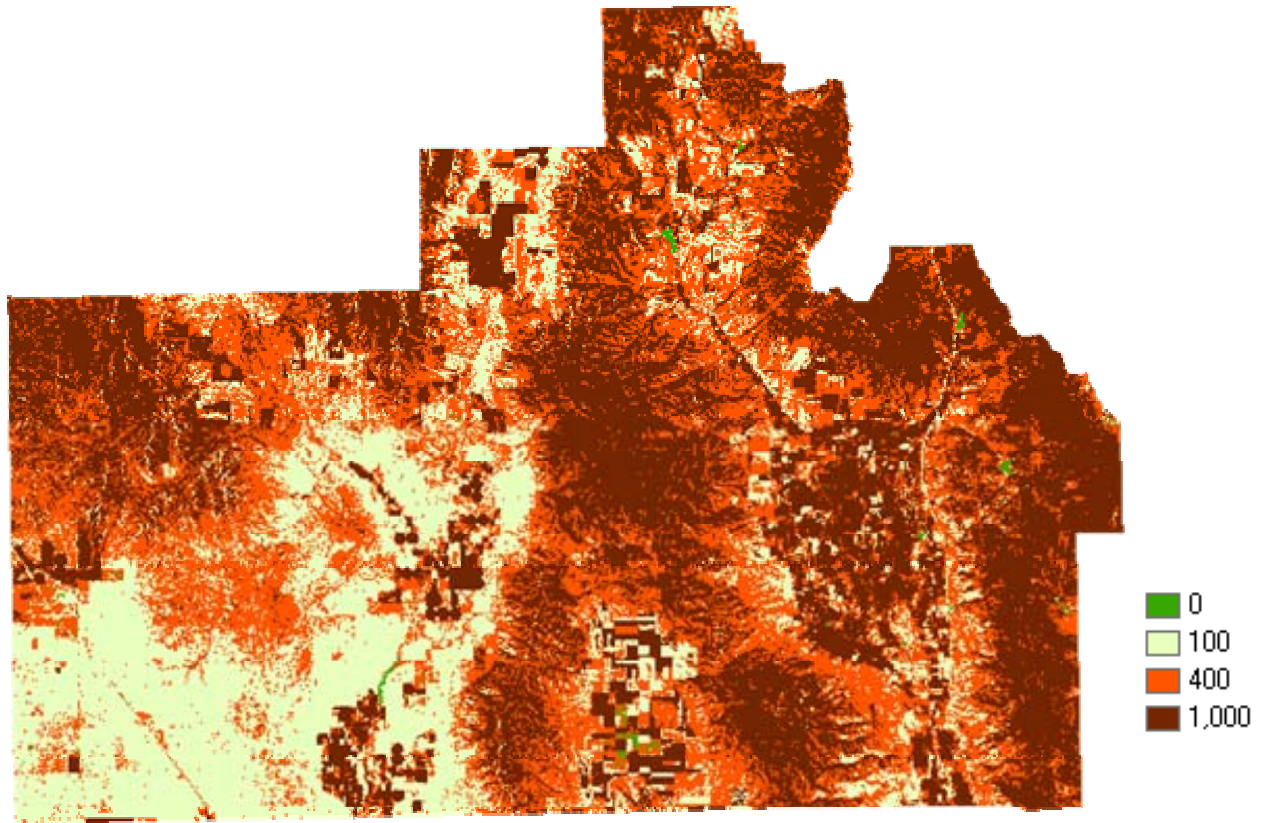


Figure 16. Fire risk compared to the amount of energy (intensity) each fuel produces. (The lower the number the lower the fire risk value.)

Figure 17 represents the wildland fire hazard rating for Oneida County based on field assessments and the models presented above.

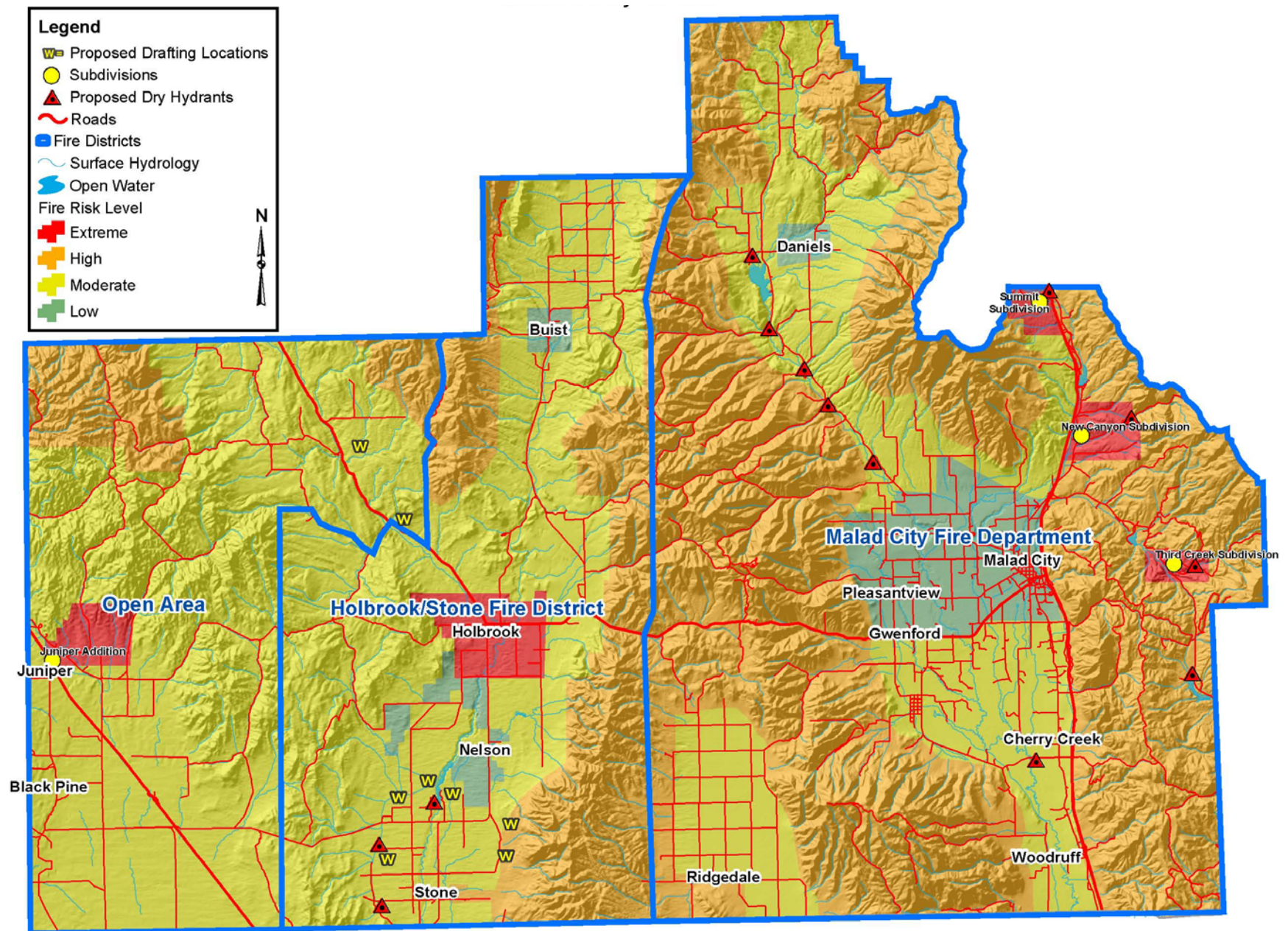


Figure 17. Wildland Fire Hazard Rating.